Remarks at White House Astronomy Night

October 19, 2015

The President. Hello, everybody! Yay! Well, everybody, have a seat. Welcome to the White House. I love Astronomy Night. And we've got a very clear night to enjoy Astronomy Night. This is some of the most fun that I have on this job. They never let me tinker with the telescopes. [*Laughter*] They don't let me hold the moon rocks when you guys aren't around. Michelle is dying to know how they grow lettuce on the International Space Station. [*Laughter*] But when you guys come, I get to have some fun.

And we've got some space buffs here tonight. We have a number of Members of Congress, including former astronaut, Senator Bill Nelson, from the great State of Florida. My science adviser, John Holdren, is here. Where is he? John—there he is. See, John is a superstar in this crowd. [*Laughter*] The head of NASA, Charlie Bolden, along with 11 of his fellow astronauts. Mae Jameson, the first African American woman in space is here. We've got Bill Nye the Science Guy. We've got the "Mythbusters" in the house.

But the most important thing we have here, in addition to this guy—[*laughter*]—is the young people who are here. Young people from across the country who are already focused on some of the greatest mysteries of the universe.

And I'm going to begin with a quick story. A long time ago, in a galaxy far, far away—[*laughter*]—actually, it was in Brooklyn—a 14-year-old asked his parents, "What are the stars?" His parents replied, "They're lights in the sky, kid." The answer did not satisfy that young man, so he set out to answer his endless questions about the stars and the planets and possibilities of extraterrestrial life. And Carl Sagan grew up to become an astronomer who enlarged this country's imagination and sense of wonder about the depths of outer space.

We've got some young Americans here tonight with that same kind of adventurous spirit.

When Pranav Sivakumar was 6 years old, he found an encyclopedia about famous scientists lying around the house. At least, he thinks it was lying around there. Actually, his parents probably were setting it out—[*laughter*]—hoping he was going to run into it. And he's been fascinated with outer space ever since. For years, every Saturday morning, his parents drove him an hour to an astrophysics lab for "Ask-a-Scientist" class. And before long, he teamed up with researchers he met there to study the "gravitational lensing of quasars." That is not what I was thinking about at his age. Pranav was a global finalist in the Google Science Fair, not once, but twice. So you know he's going to do some important things. Give him a big round of applause.

With the help from their coaches, the RCS rocketry champions of Russellville, Alabama—where are you? You're back there. There you go. Stand up, guys. They built a rocket that flies eggs—well, at least one egg—[*laughter*]—nearly one thousand feet into the air and returns to the earth, unbroken, in under a minute. They beat hundreds of other teams to take first place in the America and International Rocketry Challenges. We are very proud of you gentlemen and ladies. Great job.

From the time she was young, Phoebe Kinzelman spent nights like tonight on her grandfather's driveway, staring at the stars through his telescope. She spent a summer at Space Camp at NASA's Johnson Space Center, and her dream is to become an astronaut. I think she

speaks for many of us when she says that one of her favorite Instagram accounts is Scott Kelly's. "Space is this humbling thing," Phoebe says, "you can't get too eager to rule the entire universe." But Phoebe is on her way. Where's Phoebe? Stand up, Phoebe, so everybody can you give you a big round of applause.

And where's Pranav? Because I was talking about him, and I didn't—there you go. Give Pranav a big round of applause.

So these are examples of the extraordinary young people that we have here today. Phoebe is giving pretty wise advice for a 17-year-old. Young people like Phoebe should encourage all of us to help our young people set their sights as high as they want. We need teachers to light a spark of curiosity in young minds. And we've got some outstanding teachers here today. We need parents to leave encyclopedias of famous scientists lying around the house—[*laughter*]—or help turn a bedroom into an ideas laboratory. We need to inspire more young people to ask about the stars, and begin that lifetime quest to become the next great scientist or inventor or engineer or astronaut.

And we have to watch for and cultivate and encourage those glimmers of curiosity and possibility and not suppress them, not squelch them, because not only are the young people's futures at stake, but our own is at stake.

That's one of the reasons that my administration has worked so hard to encourage kids to enter STEM fields, especially young women who are too often underrepresented in these fields. We are halfway to my goal of training 100,000 new STEM teachers by the end of the decade. We're on track to connect 99 percent of our students to high-speed Internet before the end of the decade. And over the past 6 years, our "Educate To Innovate" campaign has raised $1 billion to support STEM programs nationwide, including 80 other Astronomy Nights happening right now all across the country.

So tonight I'm proud to announce new commitments, by cities and organizations all over the country, to expose even more students and their parents to STEM education. Bayer is launching a national effort to help 100,000 American parents and children work on science and engineering projects together. More than 300 foundations, museums, libraries, and schools across the country are partnering to bring hands-on science programming to students who don't have it. Eight observatories in Hawaii will offer all of the residents of that State free, guided tours. They didn't do that when I was in high school. [*Laughter*] Wish we had thought that up earlier.

And—but these are just a few examples of the work that's being done all across the country. And I hope that more are going to follow the leads of these outstanding organizations, because that's how we're going to make sure our next generation of explorers take us even farther than we're going today.

A few hours ago, I got a chance to talk to the astronauts up on the International Space Station, where Scott Kelly is living for an entire year. Last month, NASA found water flowing on Mars. Earlier this year, we mapped Pluto in high resolution. In recent years, we've discovered the first Earth-sized planet orbiting a star in a distant galaxy. And we've even slipped the outermost grasp of our solar system with *Voyager 1*, the first human-made object to venture into interstellar space. In 2017, with the help of American space companies, our astronauts will once again launch to space directly from American soil. And today, NASA is developing the capabilities to send humans to Mars in the 2030s. That means that some of

the young people who are here tonight might be working on that project. Some of you might be on your way to Mars.

America can do anything. We've just got to keep on encouraging every new generation to explore and invent and create and discover. We've got to keep encouraging some young kid in Brooklyn or a budding rocket scientist in Alabama or that young girl who's dreaming to become an astronaut. Because as long as young people, like so many of you who are here tonight, keep seeking answers to the great questions, America can do anything, which is why I'm so excited to have you all tonight. You make me feel hopeful about our future, because I know that you're not satisfied with being home to the last great discovery, you want to be home to the next great discovery.

And when I look out in the faces of these young people, I am absolutely confident that there are new frontiers that we're going to be busting through in my lifetime and beyond. So thank you for that. You make me excited, and you make me inspired.

So enough talk. Let's have some fun with this telescope. It looks pretty big. My understanding is, is that we've got another young lady, Sofy, to the—we need you to come up here and help me with this telescope, because I don't know what I'm doing. [*Laughter*] Where are you? Where are you? Save me. Here we go. Okay. I don't want to break it.

How are you? I'm very proud of you. Let's grab a mike here. All right, introduce yourself.

Brooklyn International High School student Sofy Alvarez. Okay. Hello, I'm Sofy Alvarez, and I'm a student at Brooklyn International High School, and I'm from Paraguay.

The President. Well, it's great to see you, Sofy. So what are we going to do with this big telescope here?

Ms. Avarez. Well, we're going to see the Moon.

The President. Well, let's do that. I see it there, but you think I'm going to get a better view through this big telescope?

Ms. Avarez. Probably.

The President. You think so?

Ms. Avarez. Yes.

The President. Okay. So, is it already set up for me?

Ms. Avarez. Oh, yes. So I just wanted to tell you more about it and how it works.

The President. Please do.

Ms. Avarez. Yes, so this is a reflecting telescope, so it has three parts. There are two mirrors, and one of them right now is capturing the light of the Moon. And then, the other mirror is just making it focus. And there is an eye-piece lens, which right now is making it—magnifying the image of the Moon. And that's why—and that's how you're going to be able to see the moon, like it's right in front of you.

So do you want to try?

The President. Should I just go ahead and try it?

Ms. Avarez. Yes.

The President. Okay. Does it matter which eye?

Ms. Avarez. The one you see the best with.

The President. I'm teasing. [*Laughter*] All right. Wow.

Ms. Avarez. So right now what you're seeing, they're the black smooth parts, the dark smooth parts. They're called "marias"—"maria" or "seas." And they're lava flows, and they're on the craters. They're the result of heavy bombardments with other gigantic space stuff with the Moon.

The President. Is "space stuff" a scientific term? [*Laughter*]

Ms. Avarez. Yes, I think so. [*Laughter*]

The President. Can I just say this looks spectacular?

Ms. Avarez. It does.

The President. You guys are going to get a chance to see through this. But as good as it looks out there, it sure looks better here. Now, the interesting thing is, the image is inverted.

Ms. Avarez. It is?

The President. Yes, it is. [*Laughter*] See, if you look up, the right side—my right side—is lit up. But if you look through the telescope, it's the left side that's lit up.

Ms. Avarez. Well, it has a mirror. It's a reflective one. So is it that——

The President. I was trying to make a point—[*laughter*]——

Ms. Avarez. Yes, yes.

The President.——about optics for—[*laughter*]. Well, this is spectacular.

So, Sofy, what year are you in school?

Ms. Avarez. I'm sorry?

The President. What year are you in school? What grade?

Ms. Avarez. I'm a senior in high school.

The President. You're a senior?

Ms. Avarez. Yes.

The President. So what do you want to do next year?

Ms. Avarez. Well, I want to follow photography. I'm also interested in Korean studies. And I also like astronomy, so I want to do something with those three, if possible.

The President. Wow.

Ms. Avarez. If possible.

The President. Anything is possible with you. You're a spectacular young lady. Give Sofy a big round of applause.

Ms. Avarez. Thank you.

The President. All right, everybody, we are setting you loose. We've got some incredible exhibits all over the place, not just this telescope, but I know that we've got a mini planetarium and virtual reality and real reality and—[*laughter*]. So there's all kinds of good stuff. I hope you

guys have a wonderful time tonight. And I hope that all of you are inspired the way I am by science and by space.

Thank you, everybody.

NOTE: The President spoke at 7:27 p.m. on the South Lawn at the White House. In his remarks, he referred to William S. Nye, television personality and executive director of the Planetary Society; Adam Savage and Jamie Hyneman, hosts, Discovery Channel's "Mythbusters" program; Pranav Sivakumar, student, Illinois Math and Science Academy in Aurora, IL, and his parents Anu Sivakumar and Siva Muthuswamy; Katie Burns, Niles Butts, Andrew Heath, Cristian Ruiz, Cady Studdard, Chelsea Suddith, and Evan Swinney, members, and Joseph Cole and Mark Keeton, coaches, Russellville City Schools Engineering Rocket Team; Phoebe Kinzelman, student, New Trier High School in Winnetka, IL; and Kjell Lindgren, crewmember, International Space Station.

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